NOVEMBER/DECEMBER 2025

# 23PEPH15A — BIO PHYSICS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are the stages of the cell cycle?
2. Name the models of Vesicular Transport mechanism.
3. What are amino acids?
4. What is the nature of a peptide bond?
5. Define action potential.
6. What are ion channels?
7. How does radiation affect macromolecules?
8. Write the radiation effect on nucleic acids.
9. Explain Chromatography.
10. Define Centrifugation.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Describe the structural peculiarities of Prokaryotic organization.

Or

(b) What is the role and importance of extracellular matrix?

12. (a) Draw and interpret the double helical structure of DNA.

Or

(b) What are $\alpha$-helix and $\beta$-sheet in protein? Explain.

13. (a) Discuss the basic structure of biological membrane.

Or

(b) Describe in detail about the membrane potential.

14. (a) Explain effects on cell and organelles by gamma radiation.

Or

(b) What are the early effects of radiation?



15. (a) What is the application of UV-visible absorption Photometry in biology?

Or

(b) Describe in detail about Gel electrophoresis and polyacrylamide gel electrophoresis.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. How do nerve cells generate electrical signals that transmit information explain?

17. Explain in detail about ribozymes.

18. Difference between active and passive transport explain.

19. Describe in detail about radiation hazards and protection.

20. How to determine the structure using x-ray crystallography?

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